Haydock Urban District Council.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH,

1896.

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HAYDOCK,

4th March, 1897.

To the Chairman of the Haydock Urban District Council,

SIR,—

I beg to submit to your Council the following Report on the Health of the Urban Sanitary District of Haydock for the year 1896, this being the ninth Annual Report which I have had the honour of presenting; the first one of which, however, only embraced the period extending from April 28th, 1888, the date of my appointment as Medical Officer of Health, to the end of that year.

POPULATION.

In view of the fact that a correct estimate of the population is the foundation on which all accurate representations of the statistics for the year must be based, the first matter claiming attention is to attempt to arrive at such an estimate.

The difficulty of such an undertaking increases with each succeeding year from the date of the previous census, and I can only re-echo the common wish of all Medical Officers of Health, that these systematic enumerations of the population might be made at more frequent intervals than once in ten years.

The last census was taken at the end of the first quarter of the year 1891. At that date the population of the Township of Haydock was found to be 6,535, including 3,509 males and 3,206 females. Since then, up to the middle of the year 1896, the "natural increase" of population in the district, that is the excess of the number of Births over the number of Deaths, has been 766. By this cause acting alone, therefore, the population for the year would have been increased to 7,301. However, the number of persons residing in a district is always more or less fluctuating by arrivals and departures other than those of Births and Deaths, and it is the absence of any means of ascertaining the balance between new-comers and out-goers, which gives rise to the uncertainty as to the population existing at any given period, and calls for the resort to some method of calculation, that so the desired result may be as nearly as possible attained.

There are three such methods commonly employed:—

I.—The Method of the Registrar-General.

The population of Haydock having been found at the census of 1881 to have been 5,863, and again at the census of 1891 to have increased to 6,535, it is assumed that the same "rate of increase" will continue to exist during the succeeding years until 1901, when the next census is due.

By the appropriate mathematical calculation the number representing the estimate formed by this method, of the population of Haydock for the year 1896, is found to be 6,918.

This method, however, is very often uncertain and unreliable, as in the course of ten years many causes may arise to either increase or diminish the population of a district out of all proportion to the previous rate of change.

For example, the population of Haydock according to the census of 1861 was 3,615; by 1871 it was found to have increased to 5,286. Now in calculating on to 1881 by this method, the estimate for the population at the middle of that year would have been 7,803, whereas, in the light of the census of 1881, the number corresponding to that period was only 5,878. Such a serious discrepancy in *excess* of the *estimated* over the *actually existing* population would have rendered all calculations based on the estimated numbers entirely erroneous and misleading.

On the other hand the application of this method to Haydock at the present time would, if uncorrected, lead to a considerable error in the opposite direction, as reasons will shortly be given, based on the two remaining methods of calculation, to show that the *real* population of the district probably exceeds the estimate formed by the Registrar-General's method by about a thousand.

II.—The Method based on the ascertainment of the number of Inhabited Houses in the District at the middle of the year, and on the assumption that the average number of inhabitants per house remains the same as that ascertained at the preceding census.

At the last census the average number of inhabitants per house in Haydock was found to be 5·88.

Some facts which I presented in my last Annual Report with regard to an unofficial census which I had then recently caused to be made, including about a third part of the houses in the Township, gave reasons for concluding that the average number of inhabitants per house remains at least as high as, if not higher than, that determined at the census.

The number of Inhabited Houses in Haydock at the middle of the year 1896 was 1341, an increase of 16 on the previous year.

The number obtained by multiplying 1341 by 5·88 is 7,885, which is therefore the estimate, by this method, of the population of Haydock for the year.

III.—The method based on the assumption that the Birth-rate remains in the same district nearly constant during successive years.

The number of Births registered during the year having been 315, and the average Birth-rate per thousand of the population for the preceding 10 years 1886-95 having been 39·8, the simple calculation of multiplying 315 by 1,000 and dividing the product by 39·8 gives the result of 7,914, which is, therefore, by this method, the estimated population for the year.

The mean of the results obtained by the last two methods, viz., 7,885 and 7,914, is almost exactly 7,900, and at this number I estimate the population for the year 1896, believing that it represents as near an approach to the truth as can be obtained.

As regards the **population of the separate Wards** into which the Township was divided two years ago, the only method available, until the next census, of making an approximate estimation, is to calculate from the number of inhabited houses in each ward, and the average number of inhabitants per house for the whole Township as determined at the last census. Thus :—

Wards.	Number of inhabited houses.	Numbers obtained by mutiplying by 5·88.
East	416	2446
Central	422	2481
West	503	2958
	1341	7885

In order to bring these numbers as nearly as may be to accord with the estimate for the whole Township already given, they may be altered as follows :—

Wards.	Estimated population.
East	2450
Central	2490
West	2960
	7900

The statistics of population for the "Civil Parish" or Township of Haydock, compiled from the Official Census Records, as far back as they extend, are tabulated below :—

Census.	Population of Haydock.	Increase in 10 years.	No. of Inhabited Houses.	Average No. of Inhabitants per House.
1801	734	—	138	5·31
1811	805	71	147	5·47
1821	916	111	148	6·18
1831	934	18	155	6·02
1841	1,296	362	215	6·02
1851	1,994	698	338	5·89
1861	3,615	1.621	601	6·01
1871	5,286	1,671	903	5·85
1881	5,863	577	1,002	5·85
1891	6,535	672	1,111	5·88

AREA.

The Area of the Township in Statute Acres is 2,409, giving an average population of 3·2 persons per acre.

Basing the calculation on the estimates of population already given, the following are the details under this heading with regard to the separate Wards of the Township :—

Ward.	Acreage.	Average Number of Persons per Acre.
East	1515	1·6
Central	615	4·0
West	278	10·6

BIRTHS.

During the year there were registered in the Township of Haydock 315 Births, including 155 males and 160 females.

They were in the proportion of 39·9 per 1,000 of the estimated population, the rate for the previous year having been 40·1, and the average rate for the preceding 10 years, 39·8.

Of the Births registered 8 were "illegitimate," as against 15 in the year 1895, and 2 in the year 1894.

The percentage of illegitimate Births was therefore 2·5, or, in other words, they were in the proportion of 25 in 1000 Births.

The following Table compares the statistics of Haydock in this respect with those for England and Wales, and those for the Registration County of Lancashire :—

PROPORTION OF ILLEGITIMATE BIRTHS.

England and Wales	Annual Average on the 10 years, 1886-95	44 in 1,000 Births.
Registration County of Lancashire...	„ „ „ „ „ „	43 „ „ „
HAYDOCK	Average of the 3 years, 1894-96	26 „ „ „

VACCINATION.

During the year 1896 three circumstances have concurred to make the subject of Vaccination stand forth prominently in the public view :—

(1). The arrival of the 100th anniversary of Jenner's first putting to experimental proof the efficacy of vaccination as protective from small-pox, an occasion which has been marked in almost every civilized country throughout the globe—*except his own*—by some public attempt to hold in grateful and honourable remembrance the name of Jenner, as a benefactor of the Human Race.

(2). The great and disastrous epidemic of Small-Pox at Gloucester, Jenner's own county city, by which it has been once more shown that this loathsome scourge still retains its power to devastate a community amongst whom vaccination has been systematically neglected. The loss of **443** lives, the blinding and disfiguring of many survivors, the almost total paralysis of the business and trade of the city for some months, representing a money loss estimated at £150,000—have been some of the results of failing to give due honour to the prophet in his own country!

(3). The publication of the long-deferred final Report of the Royal Commission on Vaccination.

After the fullest possible investigation and enquiry the majority of the members of this Commission have expressed themselves as convinced by the evidence put before them (1) That Vaccination when properly performed *does* afford protection from Small-Pox. (2) That the diminished prevalence and lessened mortality from this disease since the introduction and practice of Vaccination can only reasonably be attributed to Vaccination, and not to any other cause.

It is true that entire unanimity is not found among the opinions of the members of the Commission. In the nature of things it always has been so, that "some doubted." There are those who still remain unconvinced by the evidence put before them that the earth is round, but (doubtless honestly and sincerely) believe that it is flat.

As regards the existing state of the Law, with respect to the machinery for the performance of *Public* Vaccination and for the enforcement of *Compulsory* Vaccination, the Report of the Commissioners will probably lead to some modifications being made. In this respect the Medical Profession are not the *Masters* of the Public but its *Teachers* and its *Servants*. It is for the Legislature, as representing the Public, to determine how far, and in which cases, individual liberty is to be interfered with for the good of the community generally. An individual having conscientious objections to the wearing of clothes would not be permitted to practically carry out his belief into effect, and I presume that if a ratepayer of this Township were to propose to build a dwelling-house, immediately adjacent to other houses, of wood or other inflammable materials, your Council have powers to prohibit such erection.

In view of these circumstances which have called attention to Vaccination, I have considered it desirable to obtain some statistics to show to what extent Haydock is a vaccinated community, and thus to what extent it is protected from Small-Pox.

The subjoined figures which I present have been supplied to me by Mr. Benjamin Hobson, the Vaccination Officer for the District, and have cost him considerable time and labour to work out:—

TOWNSHIP OF HAYDOCK.	Births entered in Vaccination Register.	Certified as successfully vaccinated.	Certified as insusceptible to vaccination.	Died before vaccination	Postponed by Medical Certificate.	Removed.	No information.	TOTALS.
From Jan. 1 to Dec. 31, 1886	243	211	1	30	1	...	...	243
„ „ 1887	256	227	...	23	4	2	...	256
„ „ 1888	231	210	1	17	2	1	...	231
„ „ 1889	227	207	...	17	...	3	...	227
„ „ 1890	254	226	1	20	2	3	2	254
„ „ 1891	275	233	4	28	2	3	5	275
„ „ 1892	272	248	...	20	1	...	3	272
„ „ 1893	305	265	1	26	3	5	5	305
„ „ 1894	275	234	...	26	6	3	6	275
„ „ 1895	314	260	1	34	8	6	5	314
„ „ 1896	306	185	6	32	2	4	77	306
Totals..................	2958	2506	15	273	31	30	103	2958

The numbers of Births entered for the several years vary slightly in some cases from the numbers as returned to me by the District Registrar. The total error, however, on the 11 years does not amount to more than 6.

Leaving out of consideration the year 1896—as, of course, a large number of infants born in the latter part of that year are not yet vaccinated—and having regard only to the ten years. 1886-95, the figures work out to the following result:

Proportions per 1,000 Births.

Successfully vaccinated	875
Certified as insusceptible to vaccination..................................	3
Died before vaccination	91
Postponed by Medical Certificate	11
Removed	10
No information..	10

The proportion of Registered Births not finally accounted for in regard to Vaccination for these 10 years does not amount therefore to more than 3 per cent. Taking England and Wales as a whole the corresponding proportion for the 5 years, 1887-91, was 10 per cent. For succeeding years the proportion has been probably higher. Haydock may thus claim to be considered as a well-vaccinated community.

DEATHS.

The number of Deaths registered as having occurred in the Township during the year was 147, including 81 males and 66 females.

They were in the proportion of 18·6 per 1,000 of the estimated population.

In order, however, that the Death-rate for the District may be fairly represented, certain corrections have to be made as regards the number of deaths to be taken into consideration.

(1) *Deaths occurring within the District of persons not belonging thereto are to be excluded.* Such Deaths were :—

(*a*) Those occurring among the inmates of Haydock Lodge Lunatic Asylum 16
(*b*) Deaths among the patients at Haydock Cottage Hospital 2

Total... 18

(2) *Deaths occurring outside the District of persons properly belonging thereto should be included.* Such were, in so far as is known to me :—

(*a*) One Death at the "Borough Sanatorium," St. Helens 1
(*b*) Deaths occurring at the Workhouse Infirmary, Warrington, of persons formerly belonging to Haydock 3

Total.. 4

The corrected number of Deaths is therefore reduced to 133, and based on this number the Death-rate for the year is calculated as 16·8 per 1,000, as against 19·6 for the previous year, and 17·2 the average for the preceding 10 years

The Deaths having been allotted to the respective Wards in which they occurred, and the Deaths at Haydock Lodge having been deducted from the total of the East Ward, and those at Haydock Cottage Hospital from that of the Central Ward, as shown in the preceding statement, **the Death-rates for the separate Wards** are found to be as follows :—

Ward.	Death-rate.
East	13·1 per 1,000
Central	14·5 " "
West	20·6 " "

The following Table gives a classification of the Deaths from all causes according to ages.

Under 1 year	56	...Total, under 5 years 75
1 to 5 years	19	
5 to 10 "	1	...Total, 5 years and upwards ... 72
10 to 15 "	1	
15 to 20 "	3	
20 to 25 "	3	
25 to 30 "	5	
30 to 35 "	4	
35 to 40 "	5	
40 to 45 "	3	
45 to 50 "	6	
50 to 55 "	4	
55 to 60 "	7	
60 to 65 "	11	
65 to 70 "	3	
70 to 75 "	7	
75 to 80 "	4	
80 to 85 "	5	
	147	147

The Rate of Infant Mortality measured by the proportion of Deaths of Infants under 1 year of age to 1,000 Births, was 177, as against 191 for the previous year, and 142, the average of the preceding 10 years.

The causes of Death were as follows :—

Scarlet Fever	1
Diphtheria	1
Membranous Croup	2
Measles	5
Whooping Cough	5
Diarrhœa	1

The above diseases belong to the group known as "The Seven Principal Zymotic Diseases" (Membranous Croup being classed with Diphtheria). Adding the one death from Typhoid Fever which occurred at the "Borough Sanatorium," St. Helens, the total mortality from these diseases is 16 Deaths, as against 40 for the previous year, and corresponds to a Death-rate of 2·02 per thousand of the estimated population, that for the previous year having been 5·13, and the average of the preceding 10 years 3·26.

Influenza	1	
Phthisis	9	— Giving a Death-rate of 1.14 per 1,000.
Other Tubercular Diseases	7	
Acute Rheumatism	1	
Bronchitis	5	Giving a Death-rate from Respiratory Diseases of 2·91 per 1,000.
Pneumonia	18	
Heart Disease	5	
Cancer	4	
Diseases of Nervous System	24	
Diseases of Digestive Organs	9	
Diseases of Urinary Organs	3	
Other Diseases	6	
Atrophy—Want of Breast Milk	4	
Debility from Birth	13	
Premature Birth	9	
Senile Decay	9	
Childbirth—Puerperal Fever	1	
Injuries	4	
	147	

The Number of Deaths returned as "Not Certified" was 8, being in the proportion of 5·4 per cent. of the whole number, as against 2·4 per cent. for the previous year.

For the sake of greater precision and accuracy in the proper classification of Deaths according to their causes, as well as for diminishing facilities for crime, I would venture to express the opinion that some alterations in the Law are needed, so that neither the District Registrar, nor the Coroner, shall be empowered to assign the specific cause of Death, or even to say that a Death was from natural causes, without such medical evidence as may be attainable being required.

Inquests have been held in the Township during the year to the number of 4, as against 7 for the previous year, the cases which formed the subjects of enquiry having been as follows :—

Deaths from Drowning	2
Death from Scalding	1
Death from Suicide	1
	4

It may be noted with satisfaction that no death from Colliery Accident has occurred within the Township during the year.

In order that the statistics of a Sanitary District for any single year may be properly understood and appreciated it is necessary that they should be compared

(1). With the statistics of the same District for previous years.

(2). With the average statistics of the same District on a number of preceding years, 10 being the number usually taken for convenience of calculation, and

(3). With the corresponding statistics (*a*) for the whole Country, and (*b*) for the ‘ Registration County ” in which the District is situated.

In order that such comparisons may be made a series of tables have been prepared, which are grouped together at the end of this report in an appendix, which also contains the tables “ A ” and “ B ” according to the forms required by the Local Government Board.

Seeing that Haydock is a District which can neither be said to be entirely “ Rural ” nor wholly “ Urban,” but partakes to some extent of the characters of both classes of Districts, the comparison is perhaps to be most fairly made with the figures given for England and Wales, for the Country as a whole by the Registrar-General, and not with the separate statistics given by him for either “ Urban ” or “ Rural ” Districts.

The Annual Reports of the Medical Officer of Health not having been ordered by the Local Sanitary Authority of Haydock to be printed previously to the year 1890, it has been my desire to compile and place on permanent record in this report all the available statistics for preceding years, going back, if possible, as far as the year 1874, which was the earliest complete year after the first appointment of a M. O. H. in November, 1873.

I have met, however, with great difficulties in the carrying out of this intention, which at first seemed likely to render its complete accomplishment an impossible task.

(1). The manuscript Annual Reports of the Medical Officer of Health do not appear to have been all preserved in the Archives of your Council. Many are entirely missing, and I have in consequence been unable to obtain the assistance which these would have afforded me.

(2). I have been able to obtain from my predecessor, Dr. J. W. Watkins, the District Registrar's Returns which remained in his possession, dating from February, 1881.

(3). I next sought to ascertain whether I could obtain from the Superintendent Registrar at Warrington the details relating to the Births and Deaths registered in Haydock during the period extending from and including 1874 to January, 1881. Haydock being associated with Newton-in-Makerfield in a “ sub-district ” for Registration purposes, it must necessarily be a matter entailing considerable labour to get the details for this Township separately written out, and the usual charges for supplying such details would have amounted to so considerable a sum as to entirely prelude either my bearing the expense myself, or asking your Council to defray it.

(4). However, a further application explaining how the labour of drawing out the required returns might be diminished, by the exclusion of all unnecessary details, led to Mr. Thomas H. Sutton, the Superintendent Registrar (to whom I would wish to express my acknowledgments), undertaking to furnish me with the required information for a comparatively small sum, which I have to thank your Council for refunding to me.

(5). Being provided therefore with the materials, I have been able, with the expenditure of a little time and trouble, to work out statistics uniform with those of my own Annual Reports for the 15 years preceding these, and such statistics will be, therefore, readily available for future reference.

Subsequently to the above being in type I have, at a further cost borne by myself, for the sake of completing Table X in the appendix, obtained the returns, and worked out the statistics for the 13 years, 1861-73. This Table therefore embraces the leading mortal statistics for the 35 years preceding 1896. It commences with the first complete period of 5 years for which these statistics are given in the Registrar-General's Tables, and it goes back to a period 11 years before “ Local Self-government ” existed in Haydock (the “ Haydock Local Board ” having come into being in August, 1872), and 10 years before Dr. Beard, one of the Medical Inspectors of Her Majesty's Privy Council reported “ *that the Water Supply of Haydock, and its Drainage generally were questions which demanded anxious consideration.*” **Special attention may be drawn to the marked diminution in the mortality from Typhoid Fever and Diarrhœa which coincided with the provision of a pure Water Supply in 1883.**

It may be possible to learn something of a great whole by attentively observing a small part, and even a tiny straw floating on a great river may serve to mark the direction of its current. So it will be seen that the little district of Haydock has not been without some share in the progressive improvement in sanitary conditions and consequent diminishing of sickness and mortality which have marked the beneficent reign of our beloved Queen.

In these and in other respects the facts presented in this table will sufficiently show that " the former days were **not** better than these," while at the same time they none the less clearly indicate lines along which further improvement is to be desired and worked for.

NOTIFICATION OF INFECTIOUS DISEASES DURING THE YEAR.

During the year 1896 there were notified under the " Compulsory notication of Diseases Act " 68 cases of Infectious Diseases, as against 74 for the previous year, and 66 for the year 1894.

The following is a tabulated statement of the cases notified, showing the number of the separate diseases to which the Act applies, and the months in which they occurred :—

	Jan.	Feb.	Mar.	Apr	May	Jne.	July	Aug.	Sep.	Oct.	Nov.	Dec.	To-tals.	Totals for	
														1895	1894
Small Pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Diphtheria	4	—	3	1	2	—	—	—	—	—	—	1	11	3	4
Membranous Croup	1	—	1	—	2	—	2	2	—	—	—	2	10	11	23
Erysipelas	—	1	1	—	1	1	2	2	2	—	4	—	14	11	8
Scarlet Fever	2	1	4	1	1	1	1	1	1	1	3	1	18	29	23
Enteric or Typhoid Fever	—	—	—	—	1	1	—	4	1	—	3	2	12	19	3
Continued Fever	—	—	—	—	—	—	—	—	1	—	—	—	1	—	—
Puerperal Fever	—	—	—	—	—	1	1	—	—	—	—	—	2	1	4
Totals	7	2	9	2	7	4	6	9	5	1	10	6	68	74	66

The following Table shows the distribution of the cases of Infectious Diseases notified, as regards the separate Wards of the Township.

	East.	Central.	West.	Totals.
Diphtheria	4	4	3	11
Membranous Croup	0	2	8	10
Erysipelas	3	2	9	14
Scarlet Fever	2	7	9	18
Enteric, Typhoid, or Continued Fever	0	1	12	13
Puerperal Fever	0	1	1	2
Totals	9	17	42	68

Only 4 of these cases, 2 of Scarlet Fever, and 2 of Typhoid Fever, have been removed during the year to the St. Helens " Borough Sanatorium " at Peasley Cross, as against 18 cases removed during the previous year. The cases of Scarlet Fever recovered, one of the cases of Typhoid Fever proved fatal, and the other was remaining under treatment at the end of the year.

Two other cases of Typhoid Fever were willing to be removed, but during the months of August and September when they occurred, all the Wards of the Hospital were filled with Scarlet Fever cases, in consequence of the severe epidemic of this disease prevailing at St. Helens, and they could not be admitted.

One additional case of Typhoid Fever was willing to be taken to the Hospital, but his condition was such that it was not judged safe to remove him.

No cases of Small-pox have been treated during the year at the Old Wint Hospital.

In consequence of the large number of cases from Haydock admitted during the year 1895 to the Peasley Cross Hospital, there was a considerable sum due at the beginning of 1896 from your Council to the St. Helens Corporation over and above the fixed annual payment. At the desire of your Council I accompanied a deputation appointed to have an interview with the Health Committee of the St. Helens Corporation, with the view of asking if the way could be seen to abate or modify the charges for patients for the year in question. I have to acknowledge the courtesy with which your Council's deputation was received by the Health Committee, who, after duly considering the representations made to them, were good enough to recommend to the Corporation to modify the existing agreement to the extent that after the fixed annual payment had been arrived at, on the scale of charges at the rate of seven shillings a day per patient, the further charges should be only at the rate of five shillings per day, such modification of charges to be retrospective.

GENERAL REMARKS ON THE DISEASES WHICH HAVE PREVAILED DURING THE YEAR, AND ON THE STATISTICS PRESENTED RELATING TO THE SANITARY HISTORY OF THE YEAR.

Diphtheria.—There has been a marked increase in the number of cases of this disease notified as compared with the two preceding years. They have been, however, not of a severe or malignant type, as only one out of the eleven cases proved fatal. It may be noted, too, that several of these cases which came under my own observation, were of so slightly marked a nature that they could not have been recognised as Diphtheria but for the aid afforded by making a " Bacteriological " examiation of the throat secretions, and finding in them the special "Bacilli," or germs, which are now known to be the real and actual cause of this disease. Such cases are attended with considerable danger to the community if they remain undetected, as it is now well known they may be the means of conveying the infection to others in a malignant and dangerous form.

The advantages to the public generally of having facilities afforded, *at the public expense*, for any Medical Practitioner to obtain a Bacteriological examination of the secretions from any suspicious or doubtful case of sore throat, are such as to be now *recognised and acted upon* by many Sanitary Authorities in our own country, and to a still greater extent abroad; and it is greatly to be desired that such provision may ere long be made by *every* Sanitary Authority.

It must be borne in mind that for reliably making such examinations, *special appliances and special skill* are needed, and the public provision, to which I have alluded, can only be effected by arrangements being made for specimens to be sent to some central properly-equipped Laboratory, and reported upon from thence.

Hitherto, as regards the cases in which I have been able to avail myself of this means of diagnosis, I have been indebted to the friendly help afforded by Dr. Robertson, the Medical Officer of Health of St. Helens, to whom I would wish to express grateful acknowledgments.

Membranous Croup.—It is now known that the great majority of cases of this disease, in which a " false membrane " grows over the upper part of the wind-pipe, and causes suffocative symptoms, are due to the local action of the Diphtheria germ. Hence in Mortality Returns the deaths from Diphtheria and Membranous Croup are usually grouped together.

Most of the cases of this disease occur in children under 5 years of age, and it is one of the most fatal and dangerous of children's ailments.

As I have had occasion to remark, however, in the two preceding Annual Reports, some of the cases of this disease met with in Haydock would appear to be of a milder nature than those met with in most others of the Sanitary Districts which comprise the " Administrative County of Lancaster."

This will be made apparent by the following tabular statement:—

	Percentage Mortality of cases of Membranous Croup notified.	
Year.	Administrative County of Lancaster.	Haydock.
1894	80	35
1895	90	45
1896	87	20

Erysipelas.—There has been an increase in the number of cases of this disease notified, as compared with the two preceding years. The practical utility of having Erysipelas included among the compulsorily notifiable diseases is open to doubt. It would be of far more service if the notification of the *first* case of Measles in a house were rendered obligatory.

Scarlet Fever.—During the year 18 cases of this disease have been notified, as against 23 in the preceding year. Only one of them has proved fatal—at no period of the year can the disease be said to have been epidemic. It is a circumstance worthy of note that all of the 18 cases have been single cases, that is, in no instance has more than one case occurred in the same house.

The use of the Eucalyptus disinfectant, which has now for several years been supplied to all notified cases of Scarlet Fever at the expense of your Council, may have contributed in some degree to this result.

The following are the facts relating to the possibilities of infection having spread in the houses.

Houses from which patients were removed to the Isolation Hospital	2
Houses in which there were no other susceptible children	6
Houses in which there were other probably susceptible children	9

No. of such children in the houses.	Houses.
6	1
4	2
2	2
1	4

No information	1
Total	18

Typhoid Fever.—During the year 13 cases of this disease have been notified, as against 19 in the preceding year. The one case of " Continued Fever " is classed as Typhoid, as cases notified under this heading are most probably ill-defined cases of Typhoid.

As regards the distribution of the cases, it will have been noted that all of them, except one, occurred in the West Ward. There has been no apparent ground for attributing any of the cases to any such generally-acting cause as impure water supply or contaminated milk. All the cases would seem to have been due to local insanitary conditions. In November and December an outbreak of this disease occurred at the cottages known as " Stone Row," in Clipsley Lane. In one house there was a single case, and in two other houses there were two cases in each. On making a visit of inspection I found the privy-middens to have deep uncovered pits, and the contents instead of being dry were very wet. Now, as I have repeatedly pointed out, given such conditions, a locality may easily become an " infected area." How this comes about will be apparent from the following considerations:—

(1). The disease called Typhoid (or Enteric) Fever is now known to be due to the human body being invaded by one special kind of " Bacilli," or disease germs. Minute as they are, these disease-causing germs are as really of different kinds or species as lions, and horses, and elephants are, and each kind causes its own particular disease. The Typhoid germs take up their abode in certain definite parts of the body, and, in the processes of their growth and multiplication there, they give rise to certain effects which may classed as

(a). *Local*, that is, the changes which they give rise to at the parts where they are growing, the most important effect in Typhoid Fever being *ulceration of the bowels*; and

(b). *General*, that is, those symptoms which are caused by the circulation throughout the body in the blood of poisonous substances, or " Toxins," which are produced by the germs in their processes of growth, just in the same way as alcohol is produced in a solution of sugar by the growth therein of the " yeast fungus."

(2). The germs escape, or are given off, from the body of a patient infected with Typhoid, chiefly in the bowel discharges and urine. The onset of this disease is often very slow and insidious, and some cases may be so slight that the patient never lays up, and the case is never recognised as Typhoid. It is, therefore, very easy to see how the contents of a privy-midden may

be contaminated with Typhoid germs, and when they have once gained access there, these contents form a breeding-ground for them, and they go on multiplying very rapidly and enormously *outside* the body of the patient from whom they came.

(3). As privy-middens of the ordinary defective construction permit of a very free soakage of their liquid contents into the surrounding soil for very great distances, the whole area around these middens may become infected and swarming with the Typhoid germs, as such contaminated soil also affords conditions favourable for their growth and multiplication.

(4). For a certain depth below the surface, varying in different localities, the porous texture of the soil, although it may be more or less moist, contains a good deal of air in the spaces between the solid particles—this is called the "ground air." But on going still deeper a level is arrived at where all the spaces between the solid particles of earth are filled with water and contain no air—the water below this level is called "ground water." The level of the ground water is continually changing, sometimes rising, sometimes falling. Now it will be sufficiently obvious that with the oscillations in the level of the ground water there will be corresponding disturbances in the ground air; air being sometimes sucked into the soil from the atmosphere, and sometimes expelled from the earth's surface in more or less forcible currents. Although the connection between these varying levels of the ground water and Typhoid Fever has been found to vary in different localities, it will be easy to realize that if the soil *beneath* and *around* a dwelling-house have become infected with Typhoid germs, these may be readily carried into the air of the house and give rise to the disease among the persons dwelling there who are susceptible to the action of the germs.

It will also be apparent how difficult it is when once an area has become infected to eradicate the infection, because the whole soil, it may be for many feet below the surface, contains the germs, which *only await favourable conditions* for multiplying and diffusing themselves.

During the year 1896 a **discovery of very considerable importance** has been made, by which it may be determined with almost absolute certainty whether a patient be really suffering from Typhoid fever or not. In view of the great uncertainty already alluded to, which often exists in this disease in its earlier stages, as to the real nature of the ailment, it is obvious that any method of certainly diagnosing the disease must be attended with great advantage, not only to the patients themselves, but *to the public at large.*

This discovery may be thus briefly explained:—

(1). Typhoid germs, when introduced into suitable "nutrient" fluids, and kept under the right conditions as to temperature, &c., can be artificially "cultivated." When a drop of the fluid containing these organisms is examined under a sufficient power of the microscope, they are seen to be moving through the fluid with rapid wriggling movements.

(2). If a very minute drop of blood taken by a needle prick from the finger of a patient be added to the drop of fluid under the microscope, it is found, if the patient has Typhoid Fever, that these rapidly moving organisms in a little time *cease to move, and tend to stick to each other in groups.* This change is not found to occur when the blood is that of a person in health, or affected with any other kind of fever.

I have been able, in several doubtful cases, to avail myself of this means of diagnosis, by the help of Dr. Robertson.

The remarks already made with reference to the "Bacteriological" diagnosis of Diphtheria are equally applicable to this method of detecting the existence of Typhoid Fever. *Public provision has already been made* in Canada, and elsewhere abroad, for medical practitioners to avail themselves of this help towards benefiting both their patients and the public, by an earlier and more certain decision as to whether Typhoid Fever is present in a given case or not, and it is to be hoped that before long all Local Sanitary Authorities in this country will follow the good example already set by Manchester, Stockport, and St. Helens (among other towns) and make provision for medical practitioners to have this help in suspected cases of Typhoid Fever, as well as that already referred to with regard to Diphtheria.

Generally speaking, the statistics for the year cannot be said to be unfavourable.

The *Birth-rate,* as usual, is very high.

The *Death-rate,* from all causes, is considerably lower than that for the previous year, and it is rather lower than the average of the preceding 10 years, and also than the corresponding rate for the whole of England and Wales.

The *Death-rate from the Seven Principal Zymotic Diseases* is less than half that for the year 1895, and it is considerably less than the average rate for the previous ten years. It is also a little below the corresponding rate for the year for the whole country.

The *Death-rates* from *Phthisis* and from *Respiratory Diseases* are also comparatively low.

The *Rate of Infant Mortality,* while it shows a very decided improvement on that for the previous year, is still considerably above the average.

The remarks made in my last Annual Report as to the *excessive average mortality among mothers from the dangers incidental to child-birth* are equally applicable on this occasion.

At the beginning of the year your Council were pleased to concur in the suggestion which I made as to the desirability of my presenting *Monthly* Reports in addition to the Quarterly Reports which had hitherto been prepared, and these I trust have not been without some advantage to your Council as well as satisfaction to myself, as enabling me from time to time to bring before the Local Sanitary Authority such matters as demanded attention.

SANITARY IMPROVEMENTS CARRIED OUT DURING THE YEAR.

For the following particulars relating to the above, I am indebted to Mr. L. D. Thompson, the Clerk and Surveyor to your Council.

During March—May, a new sewer was laid from a point in Vista Lane about 460 yards from the north end thereof, and proceeding in a south-westerly direction across the fields, and there joining a previously-existing sewer.

The sewage which this sewer was constructed to divert was previously discharged into a ditch on the eastern side of the road and caused a nuisance ; moreover, the pollution of the water-course constituted a danger to cattle in the fields, especially in summer time.

This sewer receives the drainage from about 29 houses in Vista Lane. It is 490 yards long, the lower 150 yards being of 12 inch pipes, and the upper 340 yards of 9 inch pipes. The cost of the work was about £120.

In June a sewer was laid in Church Road, near the " Ram's Head " Hotel.

This was laid to take the place of an old culvert, composed of brickwork with stone covers. It receives the drainage of 18 houses, and discharges into an existing drain which, running in a southerly direction, joins the same sewer as the Vista Lane sewer connects with. It is 117 yards in length, and is composed of 9 inch pipes. The cost of this work was about £14.

The main sewer above-mentioned receives several hundred gallons of clean water per minute from a condensing engine at Messrs. Richard Evans and Co.'s " Newton Pit."

It may also be noted that new Privies have been commenced to be constructed behind " Stone Row," so as to remedy the bad sanitary conditions previously alluded to in connection with the outbreak of Typhoid Fever in these cottages.

SANITARY INSPECTION DURING THE YEAR.

The Inspector of Nuisances, Mr. John Baines, has supplied me with the following particulars relating to the work done in his department.

Dairies, Cowsheds, and Milkshops.—Within the Sanitary District there are 15 cowkeepers who sell milk, and 3 purveyors of milk resident in the district, beside 3 other purveyors who reside outside its boundaries.

The cowsheds and milkshops are reported to be kept clean and well-ventilated, and to have good drainage, and as a whole the utensils are found to be kept clean.

Lime-washing of the cowsheds was ordered where needed.

The milk-tanks used by the purveyors of milk were found to be kept clean and sweet.

Regulations made under the Dairies, Cowsheds, and Milkshops Order of 1885 have been in force since 1st July, 1888.

Slaughter-houses.—These, to the number of 5, were found to be clean, with good ventilation and drainage.

Bakehouses.—The 9 bakehouses, as a whole, were found to be clean. In some cases, however, sufficient attention had not been paid to the cleansing of the floors. This was pointed out, and those concerned promised to amend this defect by more frequent washing.

Particulars as to notices served for the abatement of nuisances:—

Defective Ashpits	19
Defective Drains	7
Blocked Gullies	10
Manure Heaps	3
Decayed Fish, &c.	2
Accumulation of Filth	4
Bad Sanitary Conditions of Property	6
Pigstyes	4
Overcrowding	2
	57

In many other cases verbal notices were given which were thereupon attended to.

No Legal Proceedings have had to be taken.

GENERAL REVIEW OF THE EXISTING SANITARY CONDITIONS OF HAYDOCK AND RECOMMENDATIONS AS TO THE LINES OF FURTHER IMPROVEMENTS.

I.—Water Supply.—As has been noted in previous Reports, a constant supply is laid on to all the houses in the Township, with the exception of about twenty outlying dwellings, derived direct from the Rivington Reservoirs belonging to the Liverpool Corporation. By the courtesy of Mr. J. Parry, the Liverpool Water Engineer, I have been favoured with a copy of the usual chemical analysis of this water made during the year by Dr. Campbell Brown, which goes to show that this is a very wholesome water, of great purity and softness. A "Bacteriological" examination has been made for me during the year of this water as drawn from a tap in my own house. This also demonstrates that the water is of exceptional purity, and that it has been submitted to very efficient sand-filtration before distribution.

As regards the *quantity of water* used during the year, from the information given to me, I find that this works out to an average of 63,400 gallons per day. Under the existing agreement with the Liverpool Corporation your Council have power to take 150,000 gallons per day. The quantity used per head of the population per day works out to 8⅓ gallons, being only about a third of the corresponding quantity for domestic consumption on the average of a number of large towns taken together.

The periods during the year when the direct supply has been cut off through derangements of the Rivington main pipes, and the storage Reservoirs have had to be drawn upon, have been as follows:—

From February 25th to February 29th	4	days.
„ May 4th to May 5th	1	„
„ July 21st to July 22nd	1	„
„ November 23rd to November 24th	1	„
„ December 14th to December 19th	5	„
„ December 22nd to December 23rd	1	„
Total	13	„

In my last Annual Report I gave detailed reasons for condemning the use of the existing open Reservoir known as the "North Florida," as a source of public supply.

I understand that your Council have in principle accepted such condemnation, and that a sub-committee have been appointed, who are negotiating for making arrangements for securing a temporary supply when needed, which will do away with the necessity for making further use of this unsatisfactory and dangerous reservoir.

II.—**Drainage.**—Although year by year improvements are being made in this respect, yet the broad and general fact remains that the work of sewering Haydock on a systematic plan and providing arrangements for preventing the pollution of water-courses has yet to be undertaken. In the meantime I would commend to the notice of your Council the desirability of taking steps to purify the brook or streamlet which runs along the side of Haydock Lane, and which is largely fouled by the sewage from the adjacent cottages.

III.—**Disposal of Excreta.**—As I have repeatedly taken occasion to point out, the "privy-midden" system which exists in Haydock is one which, with every care, cannot but be a source of danger to the public health, and although at present it may seem but a "Counsel of Perfection," I would look for, when once the District is provided with proper sewers and sewage purifying works, the ultimate replacement of this system by some form of the "water-carriage" system adaptable to cottage property.

In preparing these Annual Reports year after year the Medical Officer of Health has of necessity to travel over the same ground again and again. In pointing out defects in sanitary conditions he has to be "instant in season," and sometimes as it may appear "out of season." His part is but to give the best advice he can, not relying merely on his own knowledge or experience, but making himself the mouthpiece of a branch of Medical Science, which is ever increasing in the precision and certainty of its knowledge as to the causes of and means of preventing disease; and in so doing is but formulating and explaining those Laws of Nature which cannot be broken with impunity.

The executive power and *responsibility* must rest with the elected body constituting the Local Sanitary *Authority.*

It needs but little imagination to clothe the dry bones of the "tables" and "figures" and "statistics" of a report such as this, with all the human pain and sorrow, suffering and grief, which they so baldly represent, and to reflect that very much of this has been **preventible.**

Even if emotions of pity should fail to be aroused by the view of needless illness and death, (which it is not to be supposed for a moment would be the case) there remains the further appeal to the *self-interest* of the community, for it has been calculated by the late Dr. Farr that the average money value of every human life to our nation represents not less than the sum of £159.

I have the honour to be, Sir,

Your obedient servant,

T. E. HAYWARD, M.B.,

Medical Officer of Health.

PREFACE TO APPENDIX.

The series of Tables presented in the following pages have been compiled in separate portions, at different times, and under the inspiration of successive ideas, until they have grown to their present complete form.

The stages in their evolution may be thus briefly explained, tracing their course backwards.

(1). **The 8 years, 1889-96.**—With amplification and revision as regards the earlier of these years, the statistics are taken from my own Annual Reports, which have been presented in due course since my appointment as M.O.H.

(2). **The 5 years, 1884-88.**—Two years ago in preparing my Annual Report for the year 1894, in order to be able to give comparative average statistics for the 10 previous years, I took the trouble to work out the figures for the five years preceding my own Reports, from the Monthly Returns as made by the District Registrar of Births and Deaths.

(3). **The 10 years, 1874-83.**—As has been explained in the text of the first portion of this Report, I began, when planning the Report for this year, with the idea of replacing the missing records for these 10 years, and giving a series of statistics on a uniform plan for the whole period since Haydock has had a M.O.H.

(4). **The 13 years, 1861-73.**—With the successful accomplishment of the last named scheme, and finding that a little time, trouble, and money were the only obstacles to going back still further, I undertook the task of giving statistics from the year 1861, worked out, like those for the previous section of years (1874-83) from Returns supplied me by the Superintendent Registrar at Warrington.

The **practical object** in view with regard to this was to show to the Local Sanitary Authority and to the people of Haydock such lessons as could be learned, whether by way of warning or encouragement, from **what has actually occurred in this very District,** and to let it be seen in what respects Haydock has resembled, or differed from, the general "stream of tendency" in the country as a whole.

The period from 1861 onwards was the extent to which I had gone when this Report was first printed and ready for issue.

(5). **The 23 years 1838-60.**—Finally the idea came to me, that having already gone so far back into the past, I might, with a little more labour and expense, in my official capacity, **commemorate the 60th year of the accession to the throne of Her Most Gracious Majesty Queen Victoria, by presenting to Haydock a series of Tables giving the leading facts concerned with its Sanitary History, during the whole of her reign.**

This having been done, it may be also noted that all the years since the Registrar-General's Annual Reports commenced to be issued have been just covered (the first of these having been for the year 1838), so that a series of comparisons may now be made between the statistics for the whole of England and Wales and those for Haydock, as far back as Official Records extend. These Reports, however, for the first 9 years, 1838-46, include only meagre details relating to the total numbers of Births and Deaths, the systematic classification of Registered Deaths, according to their Causes, only dating from the year 1847.

From that year and onwards to the year 1896, I have given a complete series of statistics as to the leading points concerning Public Health for a consecutive period of 50 years, possessing such advantages as may arise from their having been compiled by one individual on a uniform plan.

It will be sufficiently obvious, even to those without any special knowledge of the matter, that the work involved in this has been by no means light. It has been, however, a labour of love, as enabling me to offer to the Township in which I have lived and worked for 17 years, and which in the nature of things has become of some regard to me as being the spot where a large, if not the largest, part of my life-work has been accomplished, a gift such as is probably possessed by but few other Sanitary Districts.

The work has also grown to be to myself a matter of absorbing interest, such as it may be difficult to arouse in others.

Within the narrow compass of one place and one year, many lessons are overlooked which are to be gathered from a view reaching over a wide area and an extended period of time.

From one point of view the whole Human Race may be looked upon as a garden ground for the growth of disease germs, and the problems, with regard to disease-prevention resolve themselves into

(1).—Such means as hinder the growth and diffusion of these germs, and

(2).—Those ways in which the human body may be fortified against their attacks.

Somehow, and at some time, some of those minute organisms whose natural habitation is in the soil near the earth's surface, and whose function in nature is to act as scavengers by devouring dead organic matter, have acquired the power of transplanting themselves, with direful results, on to those "clods of living earth," which individual human bodies, with scientific accuracy, as well as poetic imagination, may be considered to be.

There may be, therefore, some basis in Science for the hope of a future realization of the Theological conception of a "Tree of Life," for it may well be that some substance may be sometime forthcoming which, without injuring the human body, shall be totally destructive to all disease-germs, or shall render it proof against them.

It is of great interest to note that in different Sanitary Districts, it may be closely adjacent to each other, different special tendencies to some kinds of disease may be found to exist extending over long periods of time. For example, in Haydock one fact which stands out prominently is that a great mortality has always existed among children from "Croup," which is practically only a form of Diphtheria affecting the Larynx. On the other hand the neighbouring district of St. Helens has been comparatively free from it.

Other points worthy of notice are

(1).—The mortality from Phthisis has, as a rule, been much less in Haydock than the average of England as a whole.

(2).—The mortality from diseases of the Respiratory Organs has also, as a rule, been rather less than the average.

These two points are of interest as so large a proportion of the working population of Haydock have been engaged in the occupation of coal-mining.

(3)—The mortality from *Cancer* has only been in Haydock about one-half of the average for England as a whole.

As regards **Typhoid Fever,** the two chief agencies in its diffusion are

(a).—Polluted water.

(b).—Polluted soil.

The great mortality which formerly existed in Haydock from this disease was due to the concurrence of both these causes. Since 1883 the former cause has been eliminated with marked effect in diminishing the Typhoid death-rate, but the second cause, to a large extent, still remains, and to it such cases of Typhoid Fever as now occur in the district are probably due.

Again, in many districts it has been found that as Typhoid Fever has diminished, Diphtheria has increased, as if a "struggle for existence" is going on among the different species of disease germs, and when one kind has been brought in check, the vacant soil has been seized upon by another.

Many more considerations might suggest themselves by an adequate study of these tables, but for the time being they must be left to a large extent to tell their own tale, the labour of compiling them having left but little leisure for giving them such full comment as they may well demand.

Others more gifted than myself might be able to learn more and to teach more than I can as yet from the array of figures set forth in the following tables. In particular, much might have been done in the use of charts and graphic diagrams by way of making the bare figures appeal more vividly to the eye, but I have at least been able to bring forth into living view facts concerning this Township, which may otherwise have always lain buried in the oblivion of the Superintendent Registrar's Records, and to present to Haydock a miniature companion to the Annual Reports of the Registrar General.

APPENDIX.

I.—Table showing the estimated Population, number of Births, corrected number of Deaths, number of Deaths from Zymotic Diseases, &c., for the several years from 1838.

Year.	Estimated Population.	Births.	Corrected No. of Deaths.	Deaths from Zymotic Diseases.	Infant Deaths.	Deaths from Phthisis.	Deaths from Respiratory Diseases.	Deaths from Influenza.	Deaths from Cancer.
*1837	1,146								
1838	1,184	27	31	3	7	10	3	0	0
1839	1,223	50	26	8	5	3	2	0	0
1840	1,265	44	60	22	6	5	9	0	0
1841	1,310	48	23	4	3	4	1	0	0
1842	1,368	50	19	3	5	1	1	0	0
1843	1,428	52	33	5	6	4	3	0	0
1844	1,491	54	23	2	8	3	2	0	0
1845	1,556	50	†23	2	1	3	1	0	0
1846	1,625	47	34	17	8	1	1	0	0
1847	1,697	72	52	22	11	3	6	1	1
1848	1,771	75	36	5	9	5	3	—	1
1849	1,849	90	48	14	12	8	4	—	0
1850	1,931	80	‡53	4	7	7	2	—	0
1851	2,024	102	42	7	13	7	5	—	0
1852	2,148	84	67	21	18	10	7	—	0
1853	2,280	91	41	5	14	4	4	—	0
1854	2,419	86	57	21	8	6	2	—	1
1855	2,568	104	48	5	12	6	7	—	0
1856	2,725	116	53	8	12	4	2	—	1
1857	2,892	156	76	25	28	5	15	—	0
1858	3,070	126	68	27	23	6	7	—	0
1859	3,258	147	56	20	19	2	10	—	0
1860	3,457	137	58	5	17	7	11	—	0
1861	3,650	183	83	14	33	5	11	—	0
1862	3,791	196	75	16	23	5	10	—	0
1863	3,938	194	109	33	28	4	20	—	0
1864	4,090	164	127	52	30	11	15	—	0
1865	4,249	206	93	22	30	6	10	—	0
1866	4,413	191	95	24	31	5	19	—	1
1867	4,584	218	79	11	21	8	7	—	4
1868	4,762	251	139	59	37	7	8	—	1
1869	4,946	221	§162	23	24	2	14	—	0
1870	5,137	199	119	22	37	9	12	—	2
1871	5,300	250	106	26	37	12	18	—	0
1872	5,355	237	128	37	34	14	21	—	2
1873	5,411	259	116	25	26	7	18	—	1
1874	5,467	258	149	46	51	10	18	—	0
1875	5,524	243	114	25	26	10	14	—	2
1876	5,581	292	116	23	37	9	16	—	2
1877	5,639	237	96	20	19	10	21	—	2
1878	5,698	274	‖299	16	39	14	25	—	1
1879	5,758	282	122	25	41	8	19	—	1
1880	5,818	238	134	28	46	3	29	—	0
1881	5,878	241	88	13	33	4	18	—	0
1882	5,939	233	97	20	23	3	15	—	6
1883	6,001	269	77	13	27	8	19	—	0
1884	6,064	238	106	23	27	7	29	—	1
1885	6,127	239	130	52	29	6	23	—	1
1886	6,191	245	100	16	37	6	24	—	2
1887	6,255	256	127	32	32	9	20	—	3
1888	6,320	222	101	16	27	7	11	—	4
1889	6,386	229	102	24	37	6	21	—	3
1890	6,452	252	101	13	33	5	21	2	3
1891	6,553	272	117	12	39	10	26	5	3
1892	6,624	270	115	15	37	8	29	7	0
1893	6,697	304	114	20	37	5	18	0	5
1894	6,770	274	120	31	40	4	13	1	3
1895	7,800	313	153	40	60	10	25	3	2
1896	**7,900**	**315**	**133**	**16**	**56**	**9**	**23**	**1**	**4**

* It has been impossible to give statistics for 1837, as the Superintendent Registrar's records do not go back further than July of that year.

† Including 12 deaths from a colliery explosion.

‡ Including 13 and 9 deaths respectively in the explosions at "No. 13 Pit" and "The Rock Pit," which occurred in March and November of that year.

§ Including 23 and 58 deaths respectively of Haydock residents in the two "Queen-Pit" explosions.

‖ The number of Deaths for the year 1878 includes 179 Deaths of Haydock residents from the "Wood-Pit" explosion.

The estimated Populations for the years 1871-80 given in the Table have been arrived at by calculating backwards from the known "rate of increase" from the year 1871 to the year 1881 as determined by the Census Returns. As explained in the Text of the Report, the estimations which would have been made at the time, before the means of correcting them by the Census of 1881 became available, would have been greatly in excess of the true numbers.

The same method has been adopted in arriving at the estimations for the years 1861-70, and for preceding years.

With regard to the years 1881-90, as the population enumerated at the Census of 1891 differed from the estimated population only by the number 33, the numbers given for these years, as they were estimated before the Census, by the "method of the Registrar-General," may be taken as correct.

The estimations for the years 1891-94 were continued to be made by the same method; but, as it was obvious from the building of many new houses, that the population was greatly increasing in excess of the "rate of increase" from 1881 to 1891, a different mode of calculation has been adopted for the years 1895-96.

II.—Table showing the Principal Vital and Mortal Statistics for Haydock for the several years from 1838, together with comparative averages.

Year.	Birth-rate.	Death-rate.	Zymotic Death-rate.	Infant Deaths per 1,000 Births.	Death-rate from Phthisis.	Death-rate Respiratory Diseases.
1838	22·8	26·3	2·53	259	8·45	2·53
1839	40·9	21·3	6·54	100	2·45	1·64
1840	34·8	47·4	17·39	136	3·95	7·11
1841	36·6	17·6	3·05	63	3·05	0·76
1842	36·6	14·0	2·19	100	0·73	0·73
1843	36·4	23·1	3·50	115	2·80	2·10
1844	36·9	15·7	1·37	148	2·05	1·37
1845	32·1	* 7·1	1·28	20	1·93	0·64
1846	28·9	20·9	10·56	170	0·62	0·62
1847	42·4	30·6	12·96	153	1·77	3·54
1848	42·4	20·3	2·82	120	2·82	1·69
1849	48·7	26·0	7·57	133	4·33	2·16
1850	41·4	†16·1	2·07	88	3·63	1·04
1851	50·4	20·7	3·46	127	3·46	2·47
1852	39·1	31·2	9·78	214	4·66	3·26
1853	40·3	18·2	2·21	154	1·78	1·78
1854	35·6	23·6	8·68	93	2·48	0·83
1855	40·5	18·7	1·95	115	2·33	2·72
1856	42·6	19·5	2.94	103	1·47	0·73
1857	54·0	26·3	8·65	179	1·73	5·19
1858	41·1	22·2	8·80	183	1·96	2·28
1859	45·1	17·2	6·14	129	0·61	3·07
1860	39·6	16 8	1·45	124	2 02	3·18
1861	50·1	22·7	3·84	180	1·37	3·01
1862	51 7	19·8	4·22	117	1·32	2·64
1863	49·3	27·7	8·38	144	1·02	5·08
1864	40·1	31·1	12·71	183	2·69	3·67
1865	48·5	21·9	5·18	141	1·41	2·35
1866	42·7	21·3	5·38	162	1·12	4·26
1867	47·6	17·2	2·40	96	1·75	1·53
1868	52·7	29·2	12·39	143	1·47	1·68
1869	44·7	‡15·8	4·65	109	0·40	2·83
1870	38·7	23·2	4·28	186	1·75	2·34
1871	47·2	20·0	4 91	148	2 26	3·59
1872	44·3	23·9	6·91	143	2 61	3·92
1873	47·8	21·4	4 62	100	1·29	3·33
1874	47·2	27·2	8·41	197	1·83	3·29
1875	44·0	20·7	4·53	107	1·81	2·53
1876	52·3	20 8	4·12	127	1·61	2·87
1877	42·0	17·0	3·55	80	1·77	3·72
1878	48·0	§21·1	2·81	142	2·46	4·39
1879	48·9	21·2	4·34	145	1·39	3·29
1880	40 9	23·0	4·81	193	0.52	4·98
1881	40·9	14·9	2·21	137	0·68	3·06
1882	39·2	16·3	3·37	98	0·50	2·53
1883	44·8	12·8	2.17	100	1.33	3·16
1884	39·2	17·5	3·79	113	1·15	4·78
1885	39·0	21·2	8·48	121	0·97	3·75
1886	39·5	16·1	2·58	151	0·96	3·87
1887	40·9	20·3	5·11	125	1·43	3·19
1888	35·1	15·8	2·53	122	1·07	1·73
1889	35·8	15·9	3·75	161	0·93	3·28
1890	39·0	15·6	2·01	130	0·77	3·27
1891	41·5	17·8	1·83	143	1·53	3·97
1892	40·7	17·3	2·26	137	1·20	4·37
1893	45·3	17·0	2·98	121	0·74	2·68
1894	40·4	17·7	4·57	145	0·59	1·92
1895	40·1	19·6	5·13	191	1·28	3·20
1896	**39·9**	**16 8**	**2·02**	**177**	**1·14**	**2·91**
Yearly averages on the 10 years 1886-95	39·8	17·2	3·26	142	1·04	3·13
Corresponding average rates for England and Wales for the same period	31·1	18·9	2·14	148	1·55	3·80
Corresponding average rates for the "Registration County of Lancashire" for the same period.	33 0	22·2	3 02	174	1·76	4·95

* This rate is exclusive of the 12 deaths from a colliery explosion, including these the death-rate would be 14·8.

† This rate is exclusive of the deaths caused in the explosions at the "No. 13 Pit" and the "Rock Pit," including these the death-rate for the year is 27·4.

‡ The death-rate given for 1869 is exclusive of the deaths due to the "Queen-Pit" explosions; including these it would be 32·8.

§ The Death-rate for the year 1878 given in the Table is exclusive of the deaths caused by the "Wood-Pit" explosion. Including these, the Death-rate for the year would be 52 6.

III.—Table showing the number of Deaths from each of the "Seven Principal Zymotic Diseases" in the several years from 1838.

Year.	Small-Pox.	Measles.	Scarlatina.	Diptheria.	Membranous Croup.	Whooping Cough.	"Fever."	Diarrhœa.
1838	0	0	0	0	2	0	1	0
1839	0	2	0	0	0	0	6	0
1840	6	1	9	0	1	0	5	0
1841	0	0	1	0	0	0	3	0
1842	0	0	0	0	0	0	2	1
1843	0	0	0	0	1	3	1	0
1844	0	0	0	0	2	0	0	0
1845	0	0	1	0	0	0	0	1
1846	0	0	10	0	0	2	2	3
1847	0	6	1	0	2	0	11	2
1848	0	1	0	0	3	0	0	1
1849	0	0	8	0	3	0	0	3
1850	0	0	2	0	1	0	0	*1
1851	0	5	0	0	0	0	0	2
1852	0	2	11	0	1	0	1	6
1853	0	0	3	0	0	0	1	1
1854	1	0	2	0	3	1	4	†10
1855	0	2	0	0	0	0	3	0
1856	0	2	2	0	3	0	0	1
1857	4	0	2	0	6	8	0	5
1858	0	0	16	1	3	0	2	5
1859	1	8	1	1	3	2	0	4
1860	0	0	2	0	0	0	1	2
1861	0	1	0	2	0	7	1	3
1862	0	1	3	6	1	0	1	4
1863	0	5	3	5	10	3	5	2
1864	5	2	11	7	2	1	15	8
1865	5	1	2	1	2	0	3	8
1866	0	5	1	1	0	1	2	‡14
1867	0	1	4	0	1	2	1	2
1868	0	1	23	1	15	3	7	9
1869	0	12	1	0	4	1	4	1
1870	0	0	5	1	8	0	7	1
1871	0	6	2	2	1	8	3	4
1872	7	12	2	0	1	2	7	6
1873	0	0	10	0	0	2	4	9
1874	0	2	19	2	1	3	12	7
1875	0	0	4	0	1	2	10	8
1876	0	4	1	0	1	3	7	7
1877	0	3	0	1	1	0	9	6
1878	0	0	6	0	3	0	1	6
1879	0	3	10	2	7	0	2	1
1880	0	5	1	2	0	6	5	9
1881	0	1	1	0	2	3	1	5
1882	2	7	1	0	3	0	3	4
1883	0	0	0	0	4	2	3	4
1884	0	0	7	0	1	3	4	8
1885	0	28	19	0	1	1	1	2
1886	0	2	1	0	0	7	2	4
1887	0	8	17	0	2	0	1	4
1888	0	1	5	1	7	0	2	0
1889	0	0	3	1	1	11	2	6
1890	0	4	2	0	1	1	5	0
1891	0	1	0	1	2	2	1	5
1892	0	1	2	1	0	8	1	2
1893	0	1	4	0	1	0	3	11
1894	0	16	2	1	7	2	0	3
1895	0	11	1	1	5	11	2	9
1896	**0**	**5**	**1**	**1**	**2**	**5**	**1**	**1**

* This death was certified as "Asiatic cholera."

† Including 6 deaths certified as "Asiatic cholera," 1 as "Malignant cholera," and 1 as "Cholera."

‡ Including 5 deaths certified as "Choleraic Diarrhœa" and 2 as "Asiatic Cholera."

IV.—Table showing the respective Death-rates per 1,000 of the Population from each of the "Seven Principal Zymotic Diseases" for the several years from 1838.

Year.	Small-pox.	Measles.	Scarlatina.	Diphtheria and Membranous Croup.	Whooping Cough.	"Fever."	Diarrhœa.
1838	—	—	—	1·69	—	0·84	—
1839	—	1·64	—	—	—	4·91	—
1840	4·74	0·79	7·11	0·79	—	3·95	—
1841	—	—	0·76	—	—	2·29	—
1842	—	—	—	—	—	1·46	0·73
1843	—	—	—	0·70	2·10	0 70	—
1844	—	—	—	1·37	—	—	—
1845	—	—	0·64	—	—	—	0·64
1846	—	—	6·15	—	1·23	1·23	1·85
1847	—	3·54	0·59	1·18	—	6·48	1·18
1848	—	0·56	—	1·69	—	—	0·56
1849	—	—	4·33	1·62	—	—	1·62
1850	—	—	1·04	0·52	—	—	0·52
1851	—	2·47	—	—	—	—	0·99
1852	—	0·93	5·12	0·47	—	0·47	2·79
1853	—	—	1·33	—	—	0·44	0·44
1854	0·41	—	0·83	1·24	0·41	1·65	4·13
1855	—	0·78	—	—	—	1·17	—
1856	—	0·73	0·73	1·10	—	—	0·37
1857	1·38	—	0·69	2·08	2·77	—	1·73
1858	—	—	5·22	1.30	—	0·65	1·63
1859	0·31	2·46	0·31	1·23	0·61	—	1·23
1860	—	—	0·58	—	—	0·29	0·58
1861	0·00	0·27	0·00	0·55	1·92	0·27	0·82
1862	0·00	0·26	0·79	1·85	0·00	0·26	1·06
1863	0·00	1·27	0·76	3·81	0·76	1·27	0·51
1864	1·22	0·49	2·69	2·44	0·24	3·67	1·96
1865	1·18	0·24	0·47	0·71	0·00	0·71	1·88
1866	0·00	1·12	0·22	0·22	0·22	0·45	3·14
1867	0·00	0·22	0·87	0·22	0·44	0·22	0·44
1868	0 00	0·21	4·83	3·36	0 63	1·47	1·89
1869	0·00	2·43	0·20	0·81	0·20	0·81	0·20
1870	0·00	0·00	0·97	1·75	0·00	1·36	0·19
1871	0 00	1·13	0·38	0·56	1·50	0·56	0·75
1872	1·30	2·23	0·37	0·19	0.37	1·30	1·12
1873	0·00	0·00	1·85	0·00	0·37	0·74	1·66
1874	0·00	0·37	3·48	0·55	0·55	2·20	1·28
1875	0·00	0·00	0·72	0·18	0·36	1·81	1·45
1876	0·00	0·72	0·18	0·18	0·54	1·25	1·25
1877	0·00	0·53	0·00	0·35	0·00	1·59	1·06
1878	0·00	0·00	1·05	0 54	0 00	0·18	1·05
1879	0·00	0·52	1·74	1·56	0·00	0·35	0·17
1880	0·00	0·86	0·17	0·34	1·03	0·86	1·55
1881	0·00	0·17	0·17	0·34	0·51	0·17	0·85
1882	0·34	1·18	0·17	0·50	0·00	0·50	0·67
1883	0·00	0·00	0·00	0·66	0·33	0·50	0·66
1884	0·00	0·00	1·15	0·16	0·49	0·65	1·31
1885	0·00	4·56	3·09	0·16	0·16	0·16	0·32
1886	0·00	0·32	0·16	0·00	1·13	0·32	0·64
1887	0·00	1·27	2·71	0·31	0·00	0·16	0·63
1888	0·00	0·16	0·79	1·26	0·00	0·31	0·00
1889	0·00	0·00	0·46	0·31	1·72	0·31	0·93
1890	0·00	0·62	0·31	0·15	0·15	0·77	0·00
1891	0·00	0·15	0·00	0·46	0·30	0·15	0·76
1892	0·00	0·15	0·30	0·15	1·20	0·15	0 30
1893	0·00	0·15	0·59	0·15	0·00	0·45	1·63
1894	0·00	2·35	0·29	1·17	0·29	0·00	0·44
1895	0·00	1·41	0·13	0·77	1·41	0·26	1·15
1896	**0·00**	**0·63**	**0·13**	**0·38**	**0·63**	**0·13**	**0·13**
Yearly average rates on the 10 years 1886-95.	0·00	0·64	0·56	0·47	0·61	0·28	0·62
Corresponding average rates for England and Wales for the same period......	0·02	0·44	0·21	0·21	0·42	0·19	0.65
Corresponding average rates for the Registration County of Lancashire for the same period.	0·02	0·66	0·38	0·19	0·50	0·30	0.97

V.—Table showing the Mortality from Puerperal Fever and the other Accidents of Child-Birth in Haydock for the several years from 1838.

Year—	1838	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Puerperal Fever...	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0
Other Accidents of Child-birth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Totals	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	0	1	0	1

Year—	1861	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
Puerperal Fever...	0	0	0	0	0	0	0	1	0	0	0	0	1	0	3	0	1	0	1	1	2	1	0	0	0	1
Other Accidents of Child-birth.	1	0	0	0	0	0	1	1	0	0	0	1	0	1	0	1	0	0	0	2	1	2	0	0	3	1
Totals......	1	0	0	0	0	0	1	2	0	0	0	1	1	1	3	1	1	0	1	3	3	3	0	0	3	2

Year—	1887	88	89	90	91	92	93	94	95	96
Puerperal Fever...	4	0	1	1	2	1	1	2	1	1
Other Accidents of Child-birth.	0	1	1	0	2	0	3	5	0	0
Totals......	4	1	2	1	4	1	4	7	1	1

VI.—Table showing the Average Yearly Maternal Mortality per 1000 registered Births from Puerperal Fever and other accidents of Child-birth taken together for Haydock, compared with England and Wales and the Registration County of Lancashire, for the 10 years 1886-95.

England and Wales	5·02
Registration County of Lancashire ...	6·15
Haydock	**10·24**

VII.—Table showing the comparison of the Annual Average Death-rate from Cancer in Haydock for the 10 years 1886-95 with the corresponding Death-rate for the whole of England and Wales, and for the Registration County of Lancashire.

England and Wales	0.67	per 1000 of the Population.
Registration County of Lancashire ...	0·55	
Haydock	**0·43**	

VIII.—Table showing the numbers of Deaths from Colliery Accidents which have occurred in Haydock in the several years from 1838.

Year—	1838	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Number of Deaths from Colliery Accidents ...	2	0	3	2	3	3	2	*13	0	1	0	3	†24	3	6	3	3	4	4	2	3	1	4

Year—	1861	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
Number of Deaths from Colliery Accidents ...	4	2	8	6	5	4	7	2	‡90	0	4	4	0	4	5	4	2	§184	1	1	2	5	3	4	4	8

Year—	1887	88	89	90	91	92	93	94	95	96
Number of Deaths from Colliery Accidents ...	1	3	2	5	6	3	1	0	1	0

* Including 12 deaths from a colliery explosion.

† Including 13 and 9 deaths respectively in the explosions at the "No. 13 Pit" and the "Rock Pit."

‡ Including 84 deaths from the two "Queen-Pit" explosions,

§ Including 179 Deaths of Haydock residents from the "Wood-Pit" explosion.

IX.—Table showing the comparison of the chief Vital and Mortal Statistics for the Urban Sanitary District of Haydock, with those for England and Wales, *(a)* for the separate Quarters of the year 1896, and *(b)* for the whole year.

		Birth-rate	Death-rate from all Causes.	Death-rate from Zymotic Diseases.	Infant Deaths per 1000 Births.
1st Quarter...	England and Wales	29·1	17·9	2·02	143
	Haydock	**38·5**	**12·6**	**3·04**	**118**
2nd Quarter...	England and Wales	30·2	16·3	2·06	124
	Haydock	**37·5**	**14·6**	**1·52**	**189**
3rd Quarter...	England and Wales	29·4	16·3	2·92	178
	Haydock	**38·9**	**13·7**	**1·01**	**168**
4th Quarter...	England and Wales	30·1	17·9	1·65	146
	Haydock	**44·5**	**24·8**	**2·53**	**227**
Whole Year...	England and Wales	29·7	17·1	2·18	148
	Haydock	**39·9**	**16·8**	**2·02**	**177**

X.—Table showing Average Annual Rates of Mortality in Haydock for successive periods of five years compared with the corresponding statistics for the whole of England and Wales.

Years.		Death-rates per 1,000 of the Estimated Living Population from									Deaths of Mothers to 1,000 Registered Births (*i.e.*, of children born alive) from		
		All causes.	The Seven Principal Zymotic Diseases taken together (Cholera being included.)	Diphtheria and Croup.	Fever, including Typhus, Typhoid, and Continued.	Diarrhœa and Cholera.	Phthisis.	Respiratory Diseases. (excluding Croup.)	Cancer.	Infant Deaths per 1,000 Births.	Puerperal Fever.	Accidents of Child-Birth.	Puerperal Fever and Accidents of Child-birth taken together.
1847-50 (4 Years)	England	23·4	5·02	*	1·25	1·71	2·89	2·64	0·27	156	1·94	3·90	5·84
	HAYDOCK	23·3	6·36	†1·25	1·62	0·97	3·14	2·11	0·28	124	0·00	0·00	0·00
1851-55	England	22·6	4·33	*	0·98	1·27	2·82	2·81	0·31	157	1·54	3·45	4·99
	HAYDOCK	22·5	5·22	†0·34	0·75	1·67	2·94	2·21	0·09	141	4·28	4·28	8·56
1856-60	England	21·8	3·94	0·52	0·84	0·90	2·77	3·13	0·33	152	1·55	2·07	4·62
	HAYDOCK	20·4	5·60	1·14	0·19	1·11	1·56	2·89	0·07	144	1·47	2·94	4·41
1861-65	England	22·6	4·26	0·54	0·92	0·92	2·53	3·32	0·37	151	1·59	3·23	4·82
	HAYDOCK	24·6	6·87	1·87	1·24	1·25	1·56	3·35	‡0·00	153	0·00	1·06	§1·06
1866-70	England	22·4	4·25	0·33	0·85	1·24	2·45	3·39	0·40	157	1·58	3·00	4·58
	HAYDOCK	21·3	5·82	1·27	0·86	1·17	1·30	2·53	0·34	139	0·93	1·85	§2·78
1871-75	England	21·9	3·79	0·31	0·59	1·03	2·22	3·69	0·45	153	2·44	3·02	5·46
	HAYDOCK	22·6	5·88	0·30	1·32	1·25	1·96	3·33	0·18	139	3·20	1·60	4·80
1876-80	England	20·8	3·03	0·28	0·38	0·85	2·04	3·79	0·49	144	1·75	2·25	4·00
	HAYDOCK	20·6	3·82	0·59	0·85	1·02	1·55	3·85	0·21	137	2·45	2·45	4·90
1881-85	England	19·4	2·49	0·32	0·27	0·67	1·83	3·55	0·55	138	2·77	2·17	4·94
	HAYDOCK	16·5	4·00	0·36	0·39	0·76	0·93	3·46	0·27	114	2·46	4·92	7·38
1886-90	England	18·9	2·22	0·30	0·20	0·68	1·64	3·64	0·63	145	2·42	2·11	4·53
	HAYDOCK	16·7	3·20	0·41	0·37	0·44	1·03	3·07	0·48	138	5·81	2·49	8·30
1891-95	England	18·7	2·10	0·32	0·19	0·65	1·46	3·68	0·71	151	2·51	2·99	5·50
	HAYDOCK	17·9	3·35	0·54	0·20	0·86	1·07	3·23	0·38	147	4·88	6·97	11·85

* Until the year 1855 Scarlet Fever was grouped together with Diphtheria in the Registrar-General's statistics for England. Therefore separate Death-rates for Diphtheria cannot be given for these periods.

† Croup only.

‡ Some deaths certified during these years under ambiguous terms may possibly have been due to Cancer.

§ It is probable that in these years some deaths were certified under the headings of "Hemorrhage," "Peritonitis," &c., without the *primary* condition of "childbirth" being stated.

XI.—Table showing average Annual Rates of Mortality per 1,000 of estimated living Population, for Haydock, compared with corresponding figures for England and Wales, the averages being taken when possible,

(a) On the whole period of 50 years 1847-96, and

(b) Approximately on the two halves of this period, viz.:—

24 years, 1847-70.
26 years, 1871-96.

As so large a proportion of the Improved Sanitation in this country has been effected within the latter period, the figures here to be presented should clearly demonstrate what effect this has had on the Public Health.

Death-rate from All Causes.

	24 Years 1847-70.	26 Years 1871-96.	50 Years 1847-96.
England	22·6	19·8	21·1
HAYDOCK	22·4	18·8	20·5

The saving of human life as regards England in the second half of the 50 years, as compared with the first half, amounts to an annual average of 2,800 for every million of inhabitants. In Haydock the average annual saving of life amounes to about 3½ lives per thousand; with the present population this would mean an annual saving of 29 lives. It will be noted that the average mortality of Haydock has been a little below the average for England as a whole.

Death-rate from the "Seven Principal Zymotic Diseases" taken together (Cholera being included with Diarrhœa).

	24 Years 1847-70.	26 Years 1871-96.	50 Years 1847-96.
England	4·33	2·71	3·49
HAYDOCK	5·97	3·97	4·93

The mortality from these diseases appears to have been in Haydock considerably above the average for England. As Haydock has always had a very high birth-rate, and consequently a large proportion of young children among its population, Measles, Scarlet Fever, and Whooping-cough, have largely contributed to swell total of the Zymotic Death-rate.

Death-rate from Diphtheria and Croup taken together.

	15 Years, 1856-70.	25 Years, 1871-95.	40 Years, 1856-95.
England	0.46	0.31	0·36
HAYDOCK	1·43	0·44	0·81

As has been pointed out in a previous portion of this Report the majority of cases of "Croup" are in reality Diphtheritic in their nature, hence the reason for grouping them together with Diphtheria. Previously to the year 1855 Diphtheria was not classified as a separate disease. A very large mortality has always existed in Haydock from "Croup."

The following subsidiary table will make this more apparent.

Average Annual Death-rates per million of the living population.

ENGLAND—	4 yrs. 1847-50	5 yrs. 1851-55	5 yrs. 1856-60	5 yrs. 1861-65	5 yrs. 1866-70	5 yrs. 1871-75	5 yrs. 1876-80	5 yrs. 1881-85	5 yrs. 1886-90	5 yrs. 1891-95
Croup	235	245	276	288	208	184	155	163	126	70
Diphtheria	*	*	246	247	126	121	121	156	169	257
Croup and Diphtheria together			522	535	334	305	276	319	295	327
HAYDOCK—										
Croup	1253	341	1015	911	1147	148	419	368	348	426
Diphtheria	*	*	127	960	126	149	174	0	63	114
Croup and Diphtheria together			1142	1871	1273	297	593	368	411	540

* Diphtheria not separately classified.

Death-rate from "Fever" including Typhus, Typhoid (or Enteric), and simple and ill-defined forms of Continued Fever.

	24 Years, 1847-70.	26 Years, 1871-96.	50 Years, 1847-96.
England	0·96	0·32	0·63
HAYDOCK	0·90	0·61	0·75

One of the greatest triumphs of Sanitation, as regard England as a whole, has been the marked reduction in the mortality from this group of diseases. In the latter half the Death-rate

has been exactly one-third of that of the first half of the 50 years period. Whereas in the first half Haydock showed a Death-rate a little better than the average for England, the figures for the latter half show that Haydock has rather lagged behind in the race of Sanitary Improvement.

Death-rate from Diarrhœa, Dysentery, and Cholera.

	24 Years 1847-70.	25 Years 1871-75.	49 Years 1847-95.
England	1·18	0·78	0·98
HAYDOCK	1·24	0·88	1·05

The mortality from this group of diseases thus appears to have been in Haydock above the average in both halves of the period, although in Haydock, as well as in England at large, there is a considerable diminution in this death-rate in the second half as compared with the first.

Death-rate from Phthisis.

	24 Years 1847-70.	25 Years 1871-95.	49 Years 1847-95.
England	2·66	1·84	2·24
HAYDOCK	2·06	1·31	1·67

Death-rate from Respiratory Diseases.

	24 Years 1847-70.	25 Years 1871-95.	49 Years 1847-95.
England	3·08	3·67	3·38
HAYDOCK	2·64	3·39	3·02

It will be noted that the mortality in Haydock, both from Phthisis and Respiratory Diseases, has been below the average for England in both halves of the period.

A reference to Table X will show that there has been going on in England a steady *diminution* in the mortality from Phthisis. There has also been existing concurrently an equally steady *increase* in the mortality from Respiratory Diseases. It seems possible, therefore, that some of the diminution in the death-rate from Phthisis may be *apparent* rather than real. With greater precision of diagnosis, cases which in the earlier years of the period may have been certified as Phthisis, may have in later years been more truly described as Bronchitis, &c.

The sum of the death-rates from Phthisis and Respiratory Diseases is as follows :—

	24 Years 1847-70.	25 Years 1871-95.	49 Years 1847-95.
England	5·74	5·51	5·62
HAYDOCK	4·70	4·70	4·69

Death-rate from Cancer.

	24 Years, 1847-70.	26 Years, 1871-95.	49 Years, 1847-95.
England	0·34	0·57	0·45
HAYDOCK	0·15	0·30	0·23

The mortality from Cancer has about doubled in the second half of the period as compared with the first half, both as regards Haydock and England as a whole; but on the average it has only been in Haydock half that of England as a whole.

Rate of Infant Mortality, *i.e.*, the proportion of Deaths of Infants under 1 year of age to every 1,000. Births.

	24 Years, 1847-70.	26 Years, 1871-96.	50 Years, 1847-96.
England	154	146	150
HAYDOCK	141	137	139

The Infant Mortality has thus been on the whole rather less in Haydock than the average for England.

Puerperal Mortality.

		Deaths of Mothers per 1,000 registered Births from		
		Puerperal Fever.	Accidents of Child-birth.	Puerperal Fever and Accidents of Child-birth taken together.
24 Years, 1847-70.	England	1·63	3·10	4·73
	HAYDOCK	1·39	2·11	3·50
25 Years, 1871-95.	England	2·38	2·51	4·89
	HAYDOCK	3·76	3·69	7·45
49 Years, 1847-95.	England	2·01	2·80	4·81
	HAYDOCK	2.60	2·91	5·51

These statistics are very far from satisfactory. With regard to England as a whole, as has recently been pointed out by Dr. Cullingworth in an address on the subject of Puerperal Mortality, Puerperal Fever is *increasing* rather than diminishing. While as regards Haydock, the figures for the latter half compare very unfavourably with the former half of the period.

XII.—Table showing Average Yearly Statistics, calculated on the five years 1891-95, for Haydock compared with the corresponding statistics for the "Administrative County of Lancaster," and for the adjoining Sanitary Districts of St. Helens, Ashton-in-Makerfield, and Newton-in-Makerfield.

		DEATH-RATE per 1,000 of the estimated living population from							
	Birth-rate.	All Causes.	The Seven Principal Zymotic Diseases.	Diphtheria and Membranous Croup.	Typhoid (or Enteric) Fever.	Diarrhœa.	Phthisis.	Respiratory Diseases.	Infant Deaths per 1,000 Births.
Administrative County of Lancaster	30·5	19·1	2·13	0·26	0·24	0·66	1·34	4·13	158
County Borough of St. Helens	39·5	21·8	3·25	0·15	0·49	1·23	1·58	5·31	173
Urban Sanitary District of Ashton-in-Makerfield	45·1	21·0	3·11	0·18	0·41	1·29	1·47	4·68	177
Urban Sanitary District of Newton-in Makerfield	34·8	15·7	2·11	0·37	0·19	0·64	1·20	3·55	139
Urban Sanitary District of HAYDOCK	**41·6**	**17·9**	**3·35**	**0·54**	**0·20**	**0·86**	**1·07**	**3·23**	**147**
Corresponding figures for the whole of England and Wales	30·5	18·7	2·10	0·32	0·19	0·65	1·46	3·68	151

A.

Table of DEATHS during the Year 1896, in the Haydock Urban Sanitary District, classified according to Diseases, Ages, and Localities.

NAMES OF LOCALITIES adopted for the purpose of these Statistics; public institutions being shown as separate localities. *(Columns for Population and Births are in Table B.)*	MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.								MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.															
												FEVERS.												
	At all ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.		Scarlatina.	Diphtheria.	Membranous Croup.	Enteric or Typhoid.	Puerperal	Measles.	Whooping Cough.	Diarrhœa and Dysentery.	Rheumatic Fever.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Influenza.	Injuries.	All other Diseases.	TOTAL.
Township of Haydock	128	56	18	2	6	31	15	Under 5	1	1	2			5	5	1			14				45	74
								5 upwards					1				1	9	9	5	1	2	26	54
Haydock Lodge Lunatic Asylum.	16					12	4	Under 5																
								5 upwards														1	15	16
Haydock Cottage Hospital	3		1			2		Under 5														1		1
								5 Upwards															2	2
Totals	147	56	19	2	6	45	19	Under 5	1	1	2			5	5	1			14			1	45	75
								5 upwards					1				1	9	9	5	1	3	43	72
The subjoined numbers have also to be taken into account in judging of the above records of Mortality.																								
Deaths occurring outside the district among persons belonging thereto.	4					3	1	Under 5																
								5 upwards				1											3	4
Deaths occurring within the district among persons not belonging thereto.	18					14	4	Under 5																
								5 upwards														1	17	18

B.

Table of POPULATION, BIRTHS, and of NEW CASES of INFECTIOUS SICKNESS, coming to the knowledge of the Medical Officer of Health during the year 1896, in the Haydock Urban Sanitary District; classified according to Diseases, Ages, and Localities.

Names of Localities adopted for the purpose of these Statistics; Public Institutions being shown as separate localities.	Population of all Ages.		Registered Births.	Aged under 5 or over 5.	New Cases of Sickness in each Locality coming to the knowledge of the Medical Officer of Health.							No. of such Cases Removed to Hospital	
	Census 1891.	Estimated to middle of 1896.			Scarlatina.	Diphtheria.	Membranous Croup.	Fevers.			Erysipelas.	Scarlatina.	Enteric or Typhoid Fever.
								Enteric or Typhoid.	Contin'd.	Puerperal.			
Township of Haydock	6535	7900	315	Under 5	8	4	10	1			2	1	1
				5 upwards	10	7		11	1	2	12	1	1